Safety Data Sheet

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

- Yttria - Codes 9217, 9218, 9271, #1120, #1126, 1341, DV 1353, Yttria TSP, #203, #402, Density, D2

Product Name

1.2 Relevant identified uses of the substance or mixture and uses advised against

- Thermal projection powder

1.3 Details of the supplier of the safety data sheet

Manufacturer

- Saint-Gobain

One New Bond Street
Worcester, MA 01615-0137
(508) 795-5000
CeramicMaterials@saint-gobain.com

Telephone (General) ● 1-800-243-0028

1.4 Emergency telephone number

CHEMTREC ●

1-800-424-9300 (US/Canada) +01 703-527-3887 (International)

Section 2: Hazards Identification

EU/EEC

According to: EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

CLP ● Not classified
DSD/DPD ● Not classified

2.2 Label Elements

CLP

- Hazard statements ● No label element(s) required

DSD/DPD

- Risk phrases ● No label element(s) required

2.3 Other Hazards

CLP ● According to Regulation (EC) No. 1272/2008 (CLP) this material is not considered hazardous.
DSD/DPD

- According to European Directive 1999/45/EC this preparation is not considered dangerous.

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012
- Not classified

2.2 Label elements

OSHA HCS 2012

Hazard statements
- No label element(s) required

2.3 Other hazards

OSHA HCS 2012
- This product is not considered hazardous under the U.S. OSHA 29 CFR 1910.1200 Hazard Communication Standard.

Canada

According to: WHMIS

2.1 Classification of the substance or mixture

WHMIS
- Not classified

2.2 Label elements

WHMIS
- No label element(s) required

2.3 Other hazards

WHMIS
- In Canada, the product mentioned above is not considered hazardous under the Workplace Hazardous Materials Information System (WHMIS)

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance in accordance with Regulation (EC) No 1272/2008.

3.2 Mixtures

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Identifiers</th>
<th>%</th>
<th>LD50/LC50</th>
<th>Classifications According to Regulation/Directive</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yttrium trioxide</td>
<td>CAS:1314-36-9</td>
<td>95% TO 99.9%</td>
<td>NDA</td>
<td>EU DSD/DPD: Not Classified</td>
<td>NDA</td>
</tr>
<tr>
<td></td>
<td>EINECS:215-233-5</td>
<td></td>
<td></td>
<td>EU CLP: Not Classified</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OSHA HCS 2012: Not Classified</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cellulose</td>
<td>CAS:9004-34-6</td>
<td>0.1% TO 5%</td>
<td>Ingestion/Oral-Rat LD50 &gt;5 g/kg</td>
<td>EU DSD/DPD: Not Classified</td>
<td>NDA</td>
</tr>
<tr>
<td></td>
<td>EINECS:232-674-9</td>
<td></td>
<td>Inhalation-Rat LC50 &gt;5800 mg/m³ 4 Hour(s)</td>
<td>EU CLP: Not Classified</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin-Rabbit LD50 &gt;2 g/kg</td>
<td>OSHA HCS 2012: Combustible Dust</td>
<td></td>
</tr>
</tbody>
</table>

Yttrium - Codes 9217, 9218, 9271, #1120, #1126, 1341, DV 1353, Yttria TSP, #203, #402, Density, D2
Section 4 - First Aid Measures

4.1 Description of first aid measures
Inhalation
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. If signs/symptoms continue, get medical attention.

Skin
- IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs: Get medical advice/attention.

Eye
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately if symptoms occur.

Ingestion
- If swallowed, seek medical advice immediately and show this container or label.

4.2 Most important symptoms and effects, both acute and delayed
- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed
Notes to Physician
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media
Suitable Extinguishing Media
- Not combustible. Use extinguishing media suitable for surrounding fire.

Unsuitable Extinguishing Media
- No data available

5.2 Special hazards arising from the substance or mixture
Unusual Fire and Explosion Hazards
- Material is non-combustible and is not expected to pose a fire or explosion hazard.

Hazardous Combustion Products
- No data available

5.3 Advice for firefighters
- Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures
Personal Precautions
- Take proper precautions to minimize exposure by using appropriate personal protective equipment.

Emergency Procedures
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind.

6.2 Environmental precautions
- Prevent spill from entering sewers, soil or waterways.

6.3 Methods and material for containment and cleaning up
Containment/Clean-up Measures
- Avoid generating dust.
- SMALL DRY SPILLS: With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.
- LARGE SPILLS: Cover powder spill with plastic sheet or tarp to minimize spreading.
6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling
- Avoid breathing dust. Do not use in areas without adequate ventilation. Wear appropriate protective equipment.

7.2 Conditions for safe storage, including any incompatibilities

Storage
- Store in a cool, dry, well ventilated area. Keep container tightly closed.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Exposure Limits/Guidelines</th>
<th>Result</th>
<th>ACGIH</th>
<th>Argentina</th>
<th>Australia</th>
<th>Belgium</th>
<th>Canada British Columbia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellulose (9004-34-6)</td>
<td>TWAs</td>
<td>10 mg/m³ TWA</td>
<td>10 mg/m³ TWA [CMP]</td>
<td>10 mg/m³ TWA (containing no asbestos and &lt;1% crystalline silica, inhalable dust)</td>
<td>10 mg/m³ TWA</td>
<td>10 mg/m³ TWA (total dust); 3 mg/m³ TWA (respirable fraction)</td>
</tr>
<tr>
<td>Yttrium trioxide as Yttrium compounds</td>
<td>TWAs</td>
<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
<td>1 mg/m³ TWA [CMP] (as Y) as Yttrium compounds</td>
<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
</tr>
</tbody>
</table>

Exposure Limits/Guidelines (Cont.)

<table>
<thead>
<tr>
<th>Result</th>
<th>Canada Manitoba</th>
<th>Canada New Brunswick</th>
<th>Canada Northwest Territories</th>
<th>Canada Nova Scotia</th>
<th>Canada Nunavut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellulose (9004-34-6)</td>
<td>TWAs</td>
<td>10 mg/m³ TWA</td>
<td>10 mg/m³ TWA</td>
<td>5 mg/m³ TWA (respirable mass); 10 mg/m³ TWA (total mass)</td>
<td>10 mg/m³ TWA</td>
</tr>
<tr>
<td>Yttrium trioxide as Yttrium compounds</td>
<td>TWAs</td>
<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
<td>Not established</td>
<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
</tr>
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</table>

Exposure Limits/Guidelines (Cont.)

<table>
<thead>
<tr>
<th>Result</th>
<th>Canada Ontario</th>
<th>Canada Quebec</th>
<th>Canada Yukon</th>
<th>Chile</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellulose (9004-34-6)</td>
<td>STELs</td>
<td>Not established</td>
<td>Not established</td>
<td>20 mg/m³ STEL</td>
<td>Not established</td>
</tr>
<tr>
<td>TWAs</td>
<td>10 mg/m³ TWA</td>
<td>10 mg/m³ TWAEV (containing no Asbestos and &lt;1% Crystalline silica, total dust)</td>
<td>Not established</td>
<td>30 mppcf TWA; 10 mg/m³ TWA</td>
<td>8 mg/m³ TWA LPP</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.5 mg/m³ STEL (as</td>
</tr>
<tr>
<td>Yttrium oxide as Yttrium compounds</td>
<td>STELs</td>
<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
<td>1 mg/m³ TWA [VME] as Yttrium compounds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------</td>
<td>----------------------------------------</td>
<td>----------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TWAs</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yttrium oxide as Yttrium compounds</td>
<td>TWAs</td>
<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result</td>
<td>Denmark</td>
<td>Finland</td>
<td>France</td>
<td>Greece</td>
<td>Indonesia</td>
</tr>
<tr>
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<td>TWAs</td>
<td>Not established</td>
<td>Not established</td>
<td>10 mg/m³ TWA</td>
<td>10 mg/m³ TWA</td>
</tr>
<tr>
<td>Yttrium oxide as Yttrium compounds</td>
<td>TWAs</td>
<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result</td>
<td>Ireland</td>
<td>Israel</td>
<td>Korea</td>
<td>Malaysia</td>
<td>Mexico</td>
</tr>
<tr>
<td>Cellulose (9004-34-6)</td>
<td>STELs</td>
<td>20 mg/m³ STEL (total inhalable dust)</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
</tr>
<tr>
<td>TWAs</td>
<td>10 mg/m³ TWA (inhalable dust); 4 mg/m³ TWA (respirable dust)</td>
<td>10 mg/m³ TWA (paper fiber, Serial No. 293)</td>
<td>10 mg/m³ TWA</td>
<td>10 mg/m³ TWA LMPE-PPT</td>
<td></td>
</tr>
<tr>
<td>Yttrium oxide as Yttrium compounds</td>
<td>TWAs</td>
<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result</td>
<td>New Zealand</td>
<td>NIOSH</td>
<td>OSHA</td>
<td>Poland</td>
<td>Portugal</td>
</tr>
<tr>
<td>Cellulose (9004-34-6)</td>
<td>TWAs</td>
<td>10 mg/m³ TWA (inhalable dust containing no asbestos and &lt;1% free silica)</td>
<td>10 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable dust)</td>
<td>15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)</td>
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<tr>
<td>Yttrium oxide as Yttrium compounds</td>
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<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
<td>1 mg/m³ TWA (as Y) as Yttrium compounds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result</td>
<td>Singapore</td>
<td>South Africa</td>
<td>Spain</td>
<td>Switzerland</td>
<td>Taiwan</td>
</tr>
<tr>
<td>Cellulose (9004-34-6)</td>
<td>MAKs</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
<td>3 mg/m³ TWA [MAK] (respirable)</td>
</tr>
<tr>
<td>TWAs</td>
<td>10 mg/m³ PEL</td>
<td>10 mg/m³ TWA (total inhalable dust); 5 mg/m³ TWA (respirable dust)</td>
<td>10 mg/m³ TWA [VLE-ED]</td>
<td>Not established</td>
<td>Not established</td>
</tr>
<tr>
<td>STELs</td>
<td>Not established</td>
<td>20 mg/m³ STEL</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
</tr>
<tr>
<td>Yttrium oxide as Yttrium compounds</td>
<td>TWAs</td>
<td>1 mg/m³ TWA (as Y)</td>
<td>1 mg/m³ TWA [VLE-ED] (as Y)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result</td>
<td>Singapore</td>
<td>South Africa</td>
<td>Spain</td>
<td>Switzerland</td>
<td>Taiwan</td>
</tr>
<tr>
<td>Cellulose (9004-34-6)</td>
<td>MAKs</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
<td>3 mg/m³ TWA [MAK] (respirable)</td>
</tr>
<tr>
<td>TWAs</td>
<td>10 mg/m³ PEL</td>
<td>10 mg/m³ TWA (total inhalable dust); 5 mg/m³ TWA (respirable dust)</td>
<td>10 mg/m³ TWA [VLE-ED]</td>
<td>Not established</td>
<td>Not established</td>
</tr>
<tr>
<td>STELs</td>
<td>Not established</td>
<td>20 mg/m³ STEL</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
</tr>
<tr>
<td>Yttrium trioxide as Yttrium compounds</td>
<td>TWAs as Yttrium compounds</td>
<td>as Yttrium compounds</td>
<td>as Yttrium compounds</td>
<td>Not established</td>
<td>as Yttrium compounds</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>---------------------------</td>
<td>----------------------</td>
<td>----------------------</td>
<td>----------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>STELs Not established</td>
<td>3 mg/m³ STEL (as Y)</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

**Engineering Measures/Controls**
- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Personal Protective Equipment**
- Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

**Eye/Face**
- Wear safety glasses.

**Skin/Body**
- Wear appropriate gloves.

**Environmental Exposure Controls**
- Follow best practice for site management and disposal of waste. Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

**Key to abbreviations**
- ACGIH = American Conference of Governmental Industrial Hygiene
- MAK = Maximale Arbeitsplatz Konzentration is the maximum permissible concentration
- NIOSH = National Institute of Occupational Safety and Health
- OSHA = Occupational Safety and Health Administration
- STEL = Short Term Exposure Limits are based on 15-minute exposures
- STEV = Short Term Exposure Value

---

**Section 9 - Physical and Chemical Properties**

### 9.1 Information on Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Physical Form</th>
<th>Appearance/Description</th>
<th>Odor Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Solid</td>
<td>White</td>
<td>Data lacking</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
<td>Odor</td>
<td>Data lacking</td>
</tr>
<tr>
<td></td>
<td>Odor Threshold</td>
<td>Data lacking</td>
<td></td>
</tr>
</tbody>
</table>

**General Properties**
- Boiling Point: Data lacking
- Decomposition Temperature: Data lacking
- Specific Gravity/Relative Density: Data lacking
- Viscosity: Data lacking
- Oxidizing Properties: Data lacking

**Volatile**
- Vapor Pressure: Data lacking
- Evaporation Rate: Data lacking

**Flammability**
- Flash Point: Data lacking
- LEL: Autoignition
- Flammability (solid, gas): Data lacking

**Environmental**
- Octanol/Water Partition coefficient: Data lacking

---
9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under normal temperatures and pressures.

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- No data available.

10.5 Incompatible materials

- No data available.

10.6 Hazardous decomposition products

- No data available.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Components</th>
<th>Cellulose (0.1% TO 5%)</th>
<th>Acute Toxicity: Ingestion/Oral-Rat LD50 &gt; 5 g/kg; Inhalation-Rat LC50 &gt; 5800 mg/m³ 4 Hour(s); Skin-Rabbit LD50 &gt; 2 g/kg</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>GHS Properties</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012: Data lacking</td>
</tr>
<tr>
<td>Aspiration Hazard</td>
<td>EU/CLP: Not relevant</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012: Not relevant</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012: Data lacking</td>
</tr>
<tr>
<td>Germ Cell Mutagenicity</td>
<td>EU/CLP: Data lacking</td>
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<td></td>
<td>OSHA HCS 2012: Data lacking</td>
</tr>
<tr>
<td>Skin corrosion/Irritation</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012: Data lacking</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012: Data lacking</td>
</tr>
<tr>
<td>STOT-RE</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012: Data lacking</td>
</tr>
<tr>
<td>STOT-SE</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012: Data lacking</td>
</tr>
</tbody>
</table>
| Toxicity for Reproduction | EU/CLP • Data lacking  
OSHA HCS 2012 • Data lacking |
|---------------------------|-------------------------------------------------|
| Respiratory sensitization | EU/CLP • Data lacking  
OSHA HCS 2012 • Data lacking |
| Serious eye damage/Irritation | EU/CLP • Data lacking  
OSHA HCS 2012 • Data lacking |

**Target Organs**
- [206]

**Route(s) of entry/exposure**
- Inhalation, Skin, Eye, Ingestion

**Medical Conditions Aggravated by Exposure**
- Disorders of the lungs.

**Potential Health Effects**

**Inhalation**
- **Acute (Immediate)**
  - Exposure to dust may cause irritation.
- **Chronic (Delayed)**
  - No data available.

**Skin**
- **Acute (Immediate)**
  - Exposure to dust may cause mechanical irritation.
- **Chronic (Delayed)**
  - No data available.

**Eye**
- **Acute (Immediate)**
  - Exposure to dust may cause mechanical irritation. Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.
- **Chronic (Delayed)**
  - No data available.

**Ingestion**
- **Acute (Immediate)**
  - Excessive concentrations of nuisance dust in the workplace may cause mechanical irritation to mucous membranes.
- **Chronic (Delayed)**
  - No data available.

---

**Section 12 - Ecological Information**

**12.1 Toxicity**
- Material data lacking.

**12.2 Persistence and degradability**
- Material data lacking.

**12.3 Bioaccumulative potential**
- Material data lacking.

**12.4 Mobility in Soil**
- Material data lacking.

**12.5 Results of PBT and vPvB assessment**
- No PBT and vPvB assessment has been conducted.

**12.6 Other adverse effects**
- Material data lacking.

---

**Section 13 - Disposal Considerations**
13.1 Waste treatment methods

Product waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

<table>
<thead>
<tr>
<th>14.1 UN number</th>
<th>14.2 UN proper shipping name</th>
<th>14.3 Transport hazard class(es)</th>
<th>14.4 Packing group</th>
<th>14.5 Environmental hazards</th>
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</thead>
<tbody>
<tr>
<td>DOT</td>
<td>NDA</td>
<td>Not regulated</td>
<td>NDA</td>
<td>NDA</td>
</tr>
<tr>
<td>TDG</td>
<td>NDA</td>
<td>Not regulated</td>
<td>NDA</td>
<td>NDA</td>
</tr>
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<td>IMO/IMDG</td>
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<td>NDA</td>
<td>NDA</td>
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<tr>
<td>IATA/ICAO</td>
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<td>NDA</td>
<td>NDA</td>
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</tbody>
</table>

14.6 Special precautions for user
- None known.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- Not relevant.

Section 15 - Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications
- None

State Right To Know

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<th>CAS</th>
<th>MA</th>
<th>NJ</th>
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<tr>
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### Labor

**Australia - Work Health and Safety Regulations - Hazardous Substances Requiring Health Monitoring**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Australia - High Volume Industrial Chemicals List**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Australia - List of Designated Hazardous Substances - Classification**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Australia - Work Health and Safety Regulations - Threshold Quantity at Major Hazard Facilities (Table 15.1)**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Australia - Work Health and Safety Regulations - Threshold Quantity at Major Hazard Facilities (Table 15.2)**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Australia - Western Australia - Hazardous Substances Prohibited for Specified Uses**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Australia - Western Australia - Hazardous Substances Requiring Health Surveillance**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

### Environment

**Australia - National Pollutant Inventory (NPI) Substance List**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Australia - Ozone Protection Act - Scheduled Substances**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Australia - Priority Existing Chemical Program**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

### Belgium

**Labor**

**Belgium - Substances and Preparations - Carcinogens and Mutagens**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Belgium - Substances and Preparations - Suspected Carcinogens and Mutagens**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

### Canada
### Labor

**Canada - WHMIS - Classifications of Substances**

- Yttrium trioxide: 1314-36-9 Not Listed
  Uncontrolled product according to WHMIS classification criteria (including microcrystalline and paper fibers)
- Cellulose: 9004-34-6 Not Listed

**Canada - WHMIS - Ingredient Disclosure List**

- Yttrium trioxide: 1314-36-9 Not Listed
- Cellulose: 9004-34-6 Not Listed

### Environment

**Canada - CEPA - Priority Substances List**

- Yttrium trioxide: 1314-36-9 Not Listed
- Cellulose: 9004-34-6 Not Listed

### Canada British Columbia

**Environment**

**Canada - British Columbia - Ozone Depleting Substances**

- Yttrium trioxide: 1314-36-9 Not Listed
- Cellulose: 9004-34-6 Not Listed

### Canada Manitoba

**Environment**

**Canada - Manitoba - Ozone Depleting Substances and Other Halocarbons - Class 1**

- Yttrium trioxide: 1314-36-9 Not Listed
- Cellulose: 9004-34-6 Not Listed

**Canada - Manitoba - Ozone Depleting Substances and Other Halocarbons - Class 2**

- Yttrium trioxide: 1314-36-9 Not Listed
- Cellulose: 9004-34-6 Not Listed

### Canada Nova Scotia

**Environment**

**Canada - Nova Scotia - Ozone Layer Protection Regulations**

- Yttrium trioxide: 1314-36-9 Not Listed
- Cellulose: 9004-34-6 Not Listed

### Canada Ontario

**Environment**

**Canada - Ontario - Airborne Contaminant Reporting - Table 2A**

- Yttrium trioxide: 1314-36-9 Not Listed
- Cellulose: 9004-34-6 Not Listed

**Canada - Ontario - Airborne Contaminant Reporting - Table 2B**

- Yttrium trioxide: 1314-36-9 Not Listed
- Cellulose: 9004-34-6 Not Listed

**Canada - Ontario - Ozone Depleting Substances and Other Halocarbons - Class 1 Substances**

- Yttrium trioxide: 1314-36-9 Not Listed
- Cellulose: 9004-34-6 Not Listed
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EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases

- Yttrium trioxide
- Cellulose

EU - Hazardous Substances Restricted or Prohibited in Electrical Equipment (2011/65/EU) (RoHS)

- Yttrium trioxide
- Cellulose

EU - Inventory of Cosmetic Ingredients Directive (INCI) (76/768/EEC) - Other Ingredients

- Yttrium trioxide
- Cellulose

EU - Inventory of Cosmetic Ingredients Directive (INCI) (76/768/EEC) - Perfume and Aromatic Materials

- Yttrium trioxide
- Cellulose

Germany

Labor

Germany - Immission Control - Qualifying Quantities for Major Accident Prevention

- Yttrium trioxide
- Cellulose

Germany - Immission Control - Qualifying Quantities for Safety Reporting

- Yttrium trioxide
- Cellulose

Germany - TRGS 505 - Specific Lead Regulations

- Yttrium trioxide
- Cellulose

Germany - TRGS 511 - Specific Ammonium Nitrate Regulations

- Yttrium trioxide
- Cellulose

Environment

Germany - TA Luft - Types and Classes

- Yttrium trioxide
- Cellulose

Germany - TA Luft - Emission Limits for Carcinogenic Substances

- Yttrium trioxide
- Cellulose
Germany - TA Luft - Emission Limits for Fibers
- Yttrium trioxide  1314-36-9  Not Listed
- Cellulose  9004-34-6  Not Listed

Germany - TA Luft - Emission Limits for Inorganic Dusts
- Yttrium trioxide  1314-36-9  Not Listed
- Cellulose  9004-34-6  Not Listed

Germany - TA Luft - Emission Limits for Inorganic Gases
- Yttrium trioxide  1314-36-9  Not Listed
- Cellulose  9004-34-6  Not Listed

Germany - TA Luft - Emission Limits for Organic Substances
- Yttrium trioxide  1314-36-9  Not Listed
- Cellulose  9004-34-6  Not Listed

Germany - Water Classification (VwVwS) - Annex 1
- Yttrium trioxide  1314-36-9  Not Listed
- Cellulose  9004-34-6  Not Listed

Germany - Water Classification (VwVwS) - Annex 2 - Water Hazard Classes
- Yttrium trioxide  1314-36-9  Not Listed
- Cellulose  9004-34-6  Not Listed

Germany - Water Classification (VwVwS) - Annex 3
- Yttrium trioxide  1314-36-9  Not Listed
- Cellulose  9004-34-6  Not Listed

Greece

Labor
- Greece - Substances Prohibited from Use in the Workplace
  - Yttrium trioxide  1314-36-9  Not Listed
  - Cellulose  9004-34-6  Not Listed

Hong Kong

Labor
- Hong Kong - Dangerous Substances Regulations - Classification
  - Yttrium trioxide  1314-36-9  Not Listed
  - Cellulose  9004-34-6  Not Listed

India

Environment
- India - Hazardous Chemical Rules - List of Hazardous and Toxic Chemicals
  - Yttrium trioxide  1314-36-9  Not Listed
  - Cellulose  9004-34-6  Not Listed

Indonesia

Environment
- Indonesia - Hazardous Waste from Non-Specific Sources
  - Yttrium trioxide  1314-36-9  Not Listed
  - Cellulose  9004-34-6  Not Listed

ID Number 4468, hazard class 1 - low hazard to waters
### Indonesia - Hazardous Waste from Specific Sources

- **Yttrium trioxide**: 1314-36-9, Not Listed
- **Cellulose**: 9004-34-6, Not Listed

### Indonesia - Odour Level Standards

- **Yttrium trioxide**: 1314-36-9, Not Listed
- **Cellulose**: 9004-34-6, Not Listed

### Indonesia - Hazardous Waste from Overdue Chemicals

- **Yttrium trioxide**: 1314-36-9, Not Listed
- **Cellulose**: 9004-34-6, Not Listed

### Japan

#### Labor

**Japan - ISHL Dangerous Substances**

- **Yttrium trioxide**: 1314-36-9, Not Listed
- **Cellulose**: 9004-34-6, Not Listed

**Japan - ISHL Designated Carcinogens**

- **Yttrium trioxide**: 1314-36-9, Not Listed
- **Cellulose**: 9004-34-6, Not Listed

**Japan - ISHL Harmful Substances Prohibited for Manufacture**

- **Yttrium trioxide**: 1314-36-9, Not Listed
- **Cellulose**: 9004-34-6, Not Listed

**Japan - ISHL Harmful Substances Requiring Workers to Subject to Medical Exams**

- **Yttrium trioxide**: 1314-36-9, Not Listed
- **Cellulose**: 9004-34-6, Not Listed

**Japan - ISHL Harmful Substances Subject to Obtaining Permission for Manufacturing**

- **Yttrium trioxide**: 1314-36-9, Not Listed
- **Cellulose**: 9004-34-6, Not Listed

**Japan - ISHL Harmful Substances Whose Names Are to be Indicated on the Label**

- **Yttrium trioxide**: 1314-36-9, Not Listed
- **Cellulose**: 9004-34-6, Not Listed

**Japan - ISHL Prevention of Lead Poisoning**

- **Yttrium trioxide**: 1314-36-9, Not Listed
- **Cellulose**: 9004-34-6, Not Listed

**Japan - ISHL Mutagens - Existing Chemicals**

- **Yttrium trioxide**: 1314-36-9, Not Listed
- **Cellulose**: 9004-34-6, Not Listed

**Japan - ISHL Mutagens - New Chemicals**

- **Yttrium trioxide**: 1314-36-9, Not Listed
- **Cellulose**: 9004-34-6, Not Listed

**Japan - ISHL Notifiable Substances**

- **Yttrium trioxide**: 1314-36-9, >1 % weight [Table 9, 54] (listed under Yttrium and its compounds)
### Japan

**Japan - ISHL Prevention of Organic Solvent Poisoning**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Environment**

**Japan - Air Pollution Control Law - Emission Standards for Air Pollutants**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Japan - Pollutant Release Transfer Register (PRTR) - Class 1 Substances**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Japan - Pollutant Release Transfer Register (PRTR) - Class 2 Substances**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Inventory - Japan - Industrial Safety and Health Law Substances (ISHL)**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

### Malaysia

**Labor**

**Malaysia - Control of Industrial Major Accident Hazards - Threshold Quantities**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Malaysia - Occupational Safety & Health - Risk Phrases**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Malaysia - Occupational Safety & Health - Safety Phrases**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Malaysia - Occupational Safety & Health Conc. Cut-Offs for Corrosive Category**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Malaysia - Occupational Safety & Health Conc. Cut-Offs for Harmful Category**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Malaysia - Occupational Safety & Health Conc. Cut-Offs for Irritant Category**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Malaysia - Occupational Safety & Health Conc. Cut-Offs for Toxic Category**
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Malaysia - Occupational Safety & Health Conc. Cut-Offs for Very Toxic Category**
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### Netherlands - Major Accidents - Qualifying Quantities for Safety Reporting

- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

### Portugal - Other

- Portugal - Prohibited Substances
  - Yttrium trioxide: 1314-36-9, Not Listed
  - Cellulose: 9004-34-6, Not Listed

### Russia - Labor

- Russia - Limiting Quantities of Hazardous Substances
  - Yttrium trioxide: 1314-36-9, Not Listed
  - Cellulose: 9004-34-6, Not Listed

### Singapore - Labor

- Singapore - Workplace Safety and Health (Medical Examinations) Regulations 2011
  - Yttrium trioxide: 1314-36-9, Not Listed
  - Cellulose: 9004-34-6, Not Listed

### Singapore - Environment

- Singapore - Air Impurities Emission Limits
  - Yttrium trioxide: 1314-36-9, Not Listed
  - Cellulose: 9004-34-6, Not Listed

- Singapore - Dioxins/Furans Toxic Equivalency Factors (TEF)
  - Yttrium trioxide: 1314-36-9, Not Listed
  - Cellulose: 9004-34-6, Not Listed

- Singapore - Hazardous Substance Transport Quantities
  - Yttrium trioxide: 1314-36-9, Not Listed
  - Cellulose: 9004-34-6, Not Listed

- Singapore - List of Hazardous Substances
  - Yttrium trioxide: 1314-36-9, Not Listed
  - Cellulose: 9004-34-6, Not Listed

### Singapore - Other

- Singapore - Chemical Weapons - Schedule of Chemical Weapons
  - Yttrium trioxide: 1314-36-9, Not Listed
  - Cellulose: 9004-34-6, Not Listed

- Singapore - Corrosive and Explosive Substances - Corrosive Substances
  - Yttrium trioxide: 1314-36-9, Not Listed
  - Cellulose: 9004-34-6, Not Listed

### South Africa - Labor

- South Africa - General Machinery Regulations - Notifiable Substances
United Kingdom

**Environment**

United Kingdom - Pollution Inventory - Schedule 1 - Thresholds for Releases to Air
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Other**

United Kingdom - Major Accidents - International Toxic Equivalent Factors (ITEF)
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

United Kingdom - Major Accidents - Qualifying Quantities for Accident Prevention
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

United Kingdom - Major Accidents - Qualifying Quantities for Safety Reporting
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

United Kingdom - Workplace Exposure Limits (WELs) - Substances in Review
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

United Kingdom - List of Dangerous Substances in Water
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

United States

**Labor**

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

U.S. - OSHA - Specifically Regulated Chemicals
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

**Environment**

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities
- Yttrium trioxide: 1314-36-9, Not Listed
- Cellulose: 9004-34-6, Not Listed
### U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

<table>
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### U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

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### U.S. - CERCLA/SARA - Section 313 - Emission Reporting

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### U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

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### U.S. - CWA (Clean Water Act) - Hazardous Substances

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### U.S. - CWA (Clean Water Act) - Priority Pollutants

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### U.S. - CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances

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### U.S. - CWA (Clean Water Act) - Toxic Pollutants

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### United States - California

#### Environment

### U.S. - California - Proposition 65 - Carcinogens List

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### U.S. - California - Proposition 65 - Developmental Toxicity

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### U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

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### U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

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### U.S. - California - Proposition 65 - Reproductive Toxicity - Female

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### U.S. - California - Proposition 65 - Reproductive Toxicity - Male

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</table>
Yttrium trioxide 1314-36-9 Not Listed
Cellulose 9004-34-6 Not Listed

United States - Pennsylvania

Labor

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

- Yttrium trioxide 1314-36-9 Not Listed
- Cellulose 9004-34-6 Not Listed

U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

- Yttrium trioxide 1314-36-9 Not Listed
- Cellulose 9004-34-6 Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

Last Revision Date
27/February/2015

Preparation Date
20/April/2017

Disclaimer/Statement of Liability

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Key to abbreviations
NDA = No data available